ABSTRACT OF THE INVENTION

Disclosed are methods and systems that allow video applications to merge their outputs for display and to transform the outputs of other applications before display. A graphics arbiter tells applications the estimated time when the next frame will be displayed on a display screen. Applications tailor their output to the estimated display time. When output from a first application is incorporated into a scene produced by a second application, the graphics arbiter "offsets" the estimated display time it gives to the first application in order to compensate for the latency caused by the second application's processing of the first application's output. A set of overlay buffers parallels the traditional buffers used to prepare frames for the display screen. In composing a frame, the screen merges video information from a traditional buffer with that from an overlay buffer, conserving display resources at the final point in the display composition process.